

## WHAT IS CLAIMED IS:

1. An actuator for actuating a moving member, said actuator essentially comprising a screw and at least two nuts engaged on the screw, relative movement between the screw and the nuts generating said actuation, said actuator further comprising a pin through which an electrical link passes, a force-transmitting element placed in the path of the force between the screw and the moving member via one of the nuts, and a mechanical extension of said force-transmitting element that extends to the vicinity of the other nut, the pin passing both through the mechanical extension and through an element coupled to the other nut so that any abnormal shift in the force-transmitting element relative to the screw results in shear between its mechanical extension and the element coupled to the other nut, causing the pin to break and causing the electrical link to be broken.

2. An actuator according to claim 1, constituting an actuator having a primary nut and a secondary nut, each of which is coupled to the moving member via a respective specific coupling, wherein the force-transmitting element which causes shearing if it is abnormally shifted is constituted by an element that lies in the path of the forces between the screw and the moving member via the primary nut, and wherein the mechanical extension causing the shearing comes from the specific coupling between the secondary nut and the moving member, so that the abnormal shift is transmitted to the pin via the specific coupling of the secondary nut.

3. An actuator according to claim 1, wherein the shearing member is a transfer plate covering the secondary nut and providing the specific coupling between the secondary nut and the moving member.

4. An actuator according to claim 1, wherein two of the nuts have respective portions that overlap each other, through both of which the same pin passes, the pin extending in a direction that is substantially transverse to the main axis of the screw so that relative movement of the two nuts causes the pin to break by shearing, and causes the electrical link to be broken, the force-transmitting element in which any abnormal shifting is detected being, in this case, one of the nuts, the shearing mechanical extension being its overlapping portion, .

5. An actuator according to claim 1, constituting an actuator of the ball type, roller type, or wheel type, i.e. in which a primary nut has a series of balls, rollers, or wheels on its face facing the screw for the purpose of providing moving contacts between the screw and the nut.

6. An actuator according to claim 1, wherein the pin is provided with a resilient return member generating a parting force on the pin so that the pin breaking by shearing causes the two portions of the pin separated by the pin breaking to move apart.

7. An actuator according to claim 6, wherein the pin has a wider head at one of its ends, the helical spring pressing at one end against the wider head and at the other end against an element secured to or integral with one of the nuts.

9. An actuator according to claim 1, wherein the pin has two wider heads and is provided with two helical springs, each of which is placed between a wider head and an overlapping portion of a respective nut.

10. An actuator according to claim 1, wherein the pin extends in a direction that is radial relative to the main axis of the screw.

5 11. An actuator according to claim 1, wherein the electrical link extends over a go-and-return path inside the pin, the bend in which path is situated in the vicinity of that end of the pin which is closer to the screw.

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12. An actuator according to claim 1, wherein clearance between the two nuts is chosen to cause the pin to break by shearing, without causing the electrical link to break by shearing, a spring being provided on the pin so as to  
15 push apart the portions separated by the shearing, and so as then to cause the link to break by having longitudinal traction applied to it.

13. An actuator according to claim 1, wherein the two  
20 nuts are formed firstly by a secondary nut stressed when a primary nut fails, and secondly by a lock nut distinct from the primary nut, the lock nut being constrained to turn with secondary nut by the pin so that, after the pin has broken, the lock nut is released and free to turn  
25 relative to the secondary nut.

14. An actuator according to claim 1, wherein the mechanical extension is constituted by the secondary nut itself.

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15. An actuator according to claim 13, wherein the secondary nut and the lock nut have respective facing faces that are transverse to the direction of the screw, and that are organized to come into abutment with each  
35 other by moving relative to each other towards the screw and then to prevent the secondary nut from turning relative to the screw.

16. An actuator according to claim 13, in combination,  
wherein the pin carries a head directed towards the  
screw, and a spring organized to push said head away  
5 against the screw when the pin breaks, so as to brake the  
turning of the lock nut relative to the screw after the  
pin has broken.

17. An actuator according to claim 13, wherein clearances  
10 exist between the lock nut and the screw, and between the  
secondary nut and the screw, the clearance of the lock  
nut being smaller than the clearance of the secondary  
nut, so that moving the secondary nut in translation  
along the screw causes the pin to break under the action  
15 of the lock nut before mechanical co-operation takes  
place between the secondary nut and the thread of the  
screw.

18. An actuator according to claim 1, wherein the pin is  
20 equipped with a spring placed to move apart two portions  
divided by shearing, and wherein a stop element is placed  
in the vicinity of the pin, a wall of the stop element  
forming an obstacle preventing one of the divided  
portions from moving when it is pushed away by the  
25 spring.

19. An actuator according to claim 18, wherein the stop  
element is formed by a piece having two walls that are  
substantially parallel, one of the walls having the pin  
30 passing through it and serving to shear it, and the other  
wall forming the obstacle to a portion of the pin that is  
pushed away by the spring.

20. An actuator according to claim 1, wherein the pin  
35 includes a portion serving to be sheared, which portion  
is provided with a thread and is equipped with a nut  
forming an abutment head for the spring, and wherein that

head of the pin which is opposite from said spring emerges to pass through the obstacle-forming wall of the stop element, the head of the pin coming into abutment against the obstacle-forming wall when the pin breaks.

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21. An actuator according to claim 1, constituting an actuator for actuating a moving member of a transport craft.

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22. An actuator according to claim 1, constituting an actuator for actuating a moving member of an aircraft.